

Fake Factors

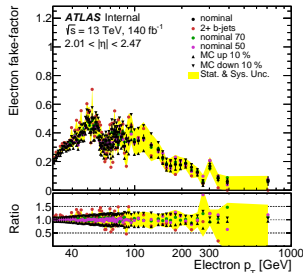
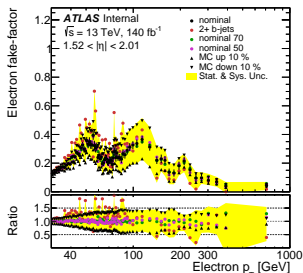
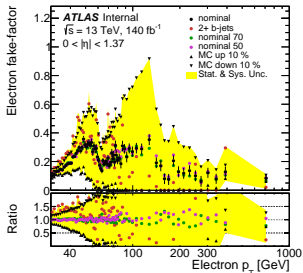
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Summer Student Project

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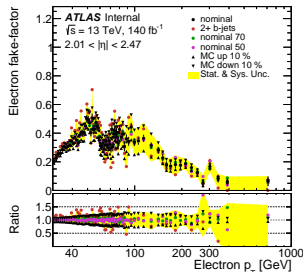
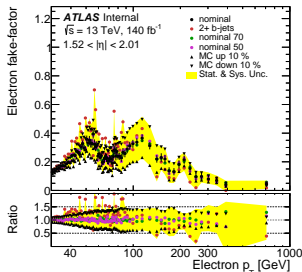
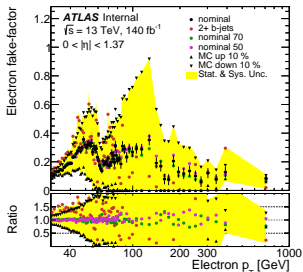
Modifying Control Region - Electrons Comparison



Nominal Selection (black)

- $N_e = 1$;
- $N_{jets} \geq 3$;
- $p_T^l > 30 \text{ GeV}$;
- $N_{b-jet} \geq 1$;
- $m_T^l + E_T^{miss} < 60 \text{ GeV}$.

Modifying Control Region - Electrons Comparison



m_T down variation (pink):

- $N_e = 1$;
- $N_{jets} \geq 3$;
- $p_T^l > 30 \text{ GeV}$;
- $N_{b-jet} \geq 1$;
- $m_T^l + E_T^{miss} < 50 \text{ GeV}$.

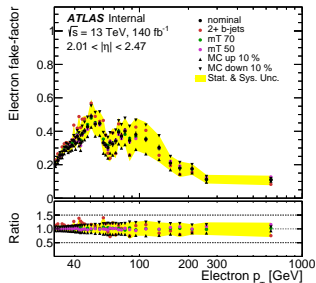
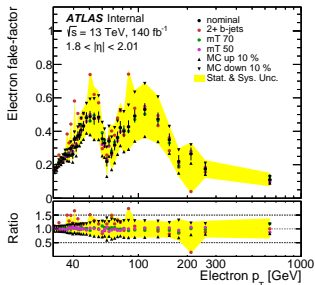
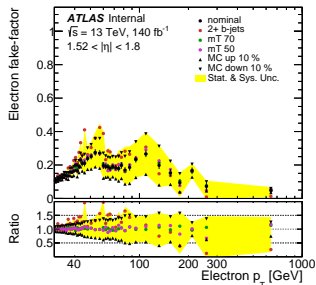
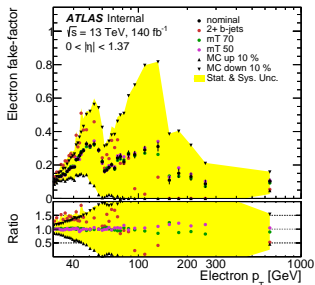
m_T up variation (green):

- $N_e = 1$;
- $N_{jets} \geq 3$;
- $p_T^l > 30 \text{ GeV}$;
- $N_{b-jet} \geq 1$;
- $m_T^l + E_T^{miss} < 70 \text{ GeV}$.

2 b-jets (red):

- $N_e = 1$;
- $N_{jets} \geq 3$;
- $p_T^l > 30 \text{ GeV}$;
- $N_{b-jet} \geq 2$;
- $m_T^l + E_T^{miss} < 6 \text{ GeV}$.

Modifying Control Region - Electrons Comparison



Closure Test (Electrons) - p_T distribution

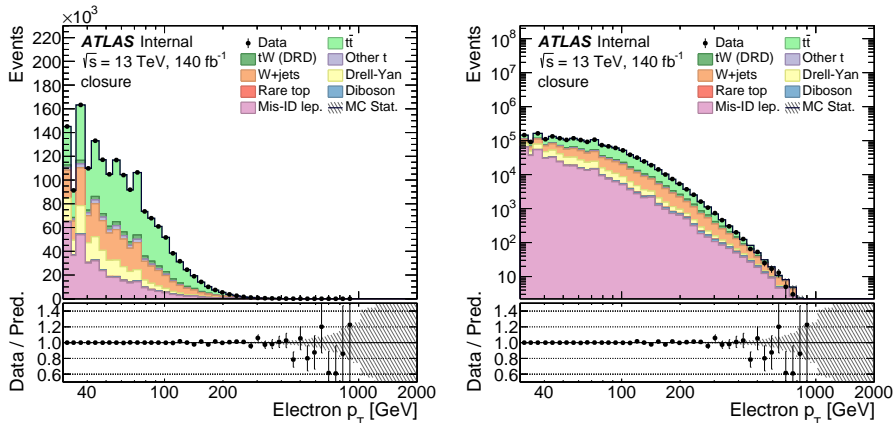


Figure 2: p_T distributions of electrons in linear (left) and logarithmic (right) scale.

Closure Test (Electrons) - η distribution

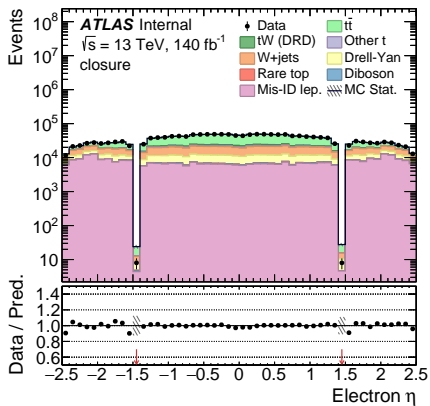
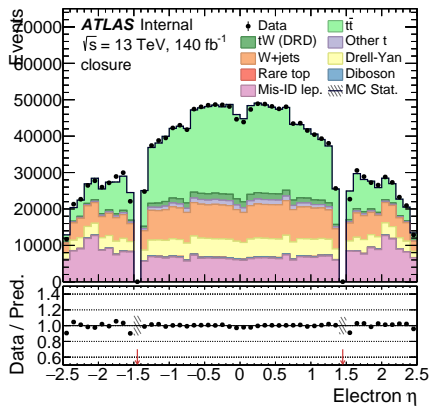


Figure 3: η distributions of electrons in linear (left) and logarithmic (right) scale.